

**PLANAR LIGHTWAVE CIRCUIT FOR  
CONDITIONING TUNABLE LASER OUTPUT**

**ABSTRACT**

5           A planar lightwave circuit (PLC) module for conditioning light output from a tunable laser  
designed to generate light at a target wavelength. The PLC module has a substrate; a primary  
waveguide embedded in said substrate, said primary waveguide having an input end for receiving  
light from the tunable laser and an output end for outputting said light; and at least a first secondary  
waveguide embedded in said substrate, said first secondary waveguide receiving a first portion of  
10   said light from the tunable laser. A filter having a passband centered on the target wavelength is  
coupled to an output of the first secondary waveguide to receive said first portion of light, and  
generates a signal related to the intensity of said first portion of light in the passband centered on the  
target wavelength. This may be used by a processor and associated laser control circuitry for  
wavelength locking purposes.